REACTORS AND FACILITIES OPERABLE, BEING BUILT, OR PLANNED

REACTORS AND FACILITIES OPERABLE, BEING BUILT, OR PLANNED

1. POWER REACTORS

PART I CIVILIAN REACTORS (DOMESTIC)

A. Central-Station Electric Power Plants

Name (licensee) [docket number]	Location	Principal nuclear contractor	Type	Power MD capacity net MW(e)	Power Licensed MW(t)	Initial criticality (yr mo)	Comment
OPERABLE							
Alvin W. Vogtle Nuclear Plant, Unit 1 (Southern Nuclear Operating Co.) [50-424]	Waynesboro, GA	West.	Pressurized water	1158.0	3565.0	87 03	
Alvin W. Vogtle Nuclear Plant, Unit 2 (Southern Nuclear Operating Co.) [50-425]	Waynesboro, GA	West.	Pressurized water	1157.0	3565.0	89 03	
Arkansas Nuclear One, Unit 1 (Entergy Operations Inc.) [50-313]	Russellville, AR	B&W	Pressurized water	836.0	2568.0	74 08	
Arkansas Nuclear One, Unit 2 (Entergy Operations Inc.) [50-368]	Russellville, AR	CE	Pressurized water	858.0	2815.0	78 12	
Beaver Valley Power Station, Unit 1 (Duquesne Light Co., Ohio Edison Co.) [50-334]	Shippingport, PA	West.	Pressurized water	810.0	2652.0	76 05	
Beaver Valley Power Station, Unit 2 (Duquesne Light Co.) [50-412]	Shippingport, PA	West.	Pressurized water	820.0	2652.0	87 08	
Braidwood Station, Unit 1 (Commonwealth Edison Co.) [50-456]	Braidwood, IL	West.	Pressurized water	1120.0	3411.0	87 05	
Braidwood Station, Unit 2 (Commonwealth Edison Co.) [50-457]	Braidwood, IL	West.	Pressurized water	1120.0	3411.0	88 03	
Browns Ferry Nuclear Power Station, Unit 1 (Tennessee Valley Authority) [50-259]	Decatur, AL	GE	Boiling water	0.0	3293.0	73 08	Maximum dependable capacity is zero. Administrative hold to resolve various TVA and NRC concerns 6/1/85.
Browns Ferry Nuclear Power Station, Unit 2 (Tennessee Valley Authority) [50-260]	Decatur, AL	GE	Boiling water	1065.0	3293.0	74 07	
Browns Ferry Nuclear Power Station, Unit 3 (Tennessee Valley Authority) [50-296]	Decatur, AL	GE	Boiling water	1065.0	3293.0	76 08	
Brunswick Steam Electric Plant, Unit 1 (Carolina Power & Light Co.) [50-325]	Southport, NC	GE	Boiling water	767.0	2436.0	76 10	
Brunswick Steam Electric Plant, Unit 2 (Carolina Power & Light Co.) [50-324]	Southport, NC	GE	Boiling water	754.0	2436.0	75 03	
Byron Station, Unit 1 (Commonwealth Edison Co.) [50-454]	Byron, IL	West.	Pressurized water	1105.0	3411.0	85 02	
Byron Station, Unit 2 (Commonwealth Edison Co.) [50-455]	Byron, IL	West.	Pressurized water	1105.0	3411.0	87 01	
Callaway Plant, Unit 1 (AmerenUE) [50-483]	Fulton, MO	West.	Pressurized water	1120.0	3565.0	84 10	
Calvert Cliffs Nuclear Power Plant, Unit 1 (Baltimore Gas & Electric Co.) [50-317]	Lusby, MD	CE	Pressurized water	830.0	2700.0	74 10	
Calvert Cliffs Nuclear Power Plant, Unit 2 (Baltimore Gas & Electric Co.) [50-318]	Lusby, MD	CE	Pressurized water	830.0	2700.0	76 11	
Catawba Nuclear Station, Unit 1 (Duke Power) [50-413]	Lake Wylie, SC	West.	Pressurized water	1129.0	3411.0	85 01	

1. POWER REACTORS

PART I CIVILIAN REACTORS (DOMESTIC)

A. Central-Station Electric Power Plants (Continued)

Name (licensee) [docket number]	Location	Principal nuclear contractor	Type	Power MD capacity net MW(e)	Power Licensed MW(t)	Initial criticality (yr mo)	Comment
OPERABLE (Continued)							
Catawba Nuclear Station, Unit 2 (Duke Power) [50-414]	Lake Wylie, SC	West.	Pressurized water	1129.0	3411.0	86 05	
Clinton Power Station, Unit 1 (Illinois Power Co.) [50-461]	Clinton, IL	GE	Boiling water	930.0	2894.0	87 04	
Comanche Peak Steam Electric Station, Unit 1 (TU Electric Co.) [50-445]	Glen Rose, TX	West.	Pressurized water	1150.0	3411.0	90 04	
Comanche Peak Steam Electric Station, Unit 2 (TU Electric Co.) [50-446]	Glen Rose, TX	West.	Pressurized water	1150.0	3411.0	93 03	Commercial operation, 8/3/93.
Cooper Nuclear Station (Nebraska Public Power District) [50-298]	Brownville, NE	GE	Boiling water	764.0	2381.0	74 02	
Crystal River Nuclear Plant, Unit 3 (Florida Power Corp.) [50-302]	Red Level, FL	B&W	Pressurized water	821.0	2544.0	77 01	
Davis-Besse Nuclear Power Station, Unit 1 (First Energy) [50-346]	Oak Harbor, OH	B&W	Pressurized water	877.0	2772.0	77 08	
Diablo Canyon Nuclear Power Plant, Unit 1 (Pacific Gas & Electric Co.) [50-275]	Diablo Canyon, CA	West.	Pressurized water	1073.0	3338.0	84 04	
Diablo Canyon Nuclear Power Plant, Unit 2 (Pacific Gas & Electric Co.) [50-323]	Diablo Canyon, CA	West.	Pressurized water	1087.0	3411.0	85 08	
Donald C. Cook Nuclear Power Plant, Unit 1 (American Electric Power) [50-315]	Bridgman, MI	West.	Pressurized water	1000.0	3250.0	75 01	
Donald C. Cook Nuclear Power Plant, Unit 2 (American Electric Power) [50-316]	Bridgman, MI	West.	Pressurized water	1060.0	3411.0	78 03	
Dresden Nuclear Power Station, Unit 2 (Commonwealth Edison Co.) [50-237]	Morris, IL	GE	Boiling water	772.0	2527.0	70 01	
Dresden Nuclear Power Station, Unit 3 (Commonwealth Edison Co.) [50-249]	Morris, IL	GE	Boiling water	773.0	2527.0	71 01	
Duane Arnold Energy Center, Unit 1 (IES Utilities Inc.) [50-331]	Palo, IA	GE	Boiling water	515.0	1658.0	74 03	
Edwin I. Hatch Nuclear Plant, Unit 1 (Southern Nuclear Operating Co.) [50-321]	Baxley, GA	GE	Boiling water	737.0	2436.0	74 09	
Edwin I. Hatch Nuclear Plant, Unit 2 (Soutern Nuclear Operating Co.) [50-366]	Baxley, GA	GE	Boiling water	757.0	2436.0	78 07	
Enrico Fermi Atomic Power Plant, Unit 2 (Detroit Edison Co.) [50-341]	Newport, MI	GE	Boiling water	1085.0	3430.0	85 06	
Fort Calhoun Station, Unit 1 (Omaha Public Power District) [50-285]	Fort Calhoun, NE	Comb.	Pressurized water	478.0	1500.0	73 08	
Grand Gulf Nuclear Station, Unit 1 (Entergy Operations Inc.) [50-416]	Port Gibson, MS	GE	Boiling water	1143.0	3833.0	82 08	
H.B. Robinson Plant, Unit 2 (Carolina Power & Light Co.) [50-261]	Hartsville, SC	West.	Pressurized water	683.0	2300.0	70 09	
Hope Creek Nuclear Generating Station, Unit 1 (Public Service Electric & Gas Co.) [50-354]	Salem, NJ	GE	Boiling water	1031.0	3293.0	86 06	
Indian Point Station, Unit 2 (Consolidated Edison Co.) [50-247]	Buchanan, NY	West.	Pressurized water	951.0	3071.0	73 05	

Indian Point Station, Unit 3 (New York Power Authority) [50-286]	Buchanan, NY	West.	Pressurized water	965.0	3025.0	76 04
James A. FitzPatrick Nuclear Power Plant (New York Power Authority) [50-333]	Scriba, NY	GE	Boiling water	780.0	2436.0	74 11
Joseph M. Farley Nuclear Plant, Unit 1 (Southern Nuclear Operating Co.) [50-348]	Dothan, AL	West.	Pressurized water	812.0	2652.0	77 08
Joseph M. Farley Nuclear Plant, Unit 2 (Southern Nuclear Operating Co.) [50-364]	Dothan, AL	West.	Pressurized water	822.0	2652.0	81 05
Kewaunee Nuclear Power Plant (Wisconsin Public Service Corp.) [50-305]	Carlton, WI	West.	Pressurized water	511.0	1650.0	74 03
La Salle County Station, Unit 1 (Commonwealth Edison Co.) [50-373]	Seneca, IL	GE	Boiling water	1036.0	3323.0	82 06
La Salle County Station, Unit 2 (Commonwealth Edison Co.) [50-374]	Seneca, IL	GE	Boiling water	1036.0	3323.0	84 03
Limerick Generating Station, Unit 1 (Philadelphia Electric Co.) [50-352]	Pottstown, PA	GE	Boiling water	1055.0	3293.0	84 12
Limerick Generating Station, Unit 2 (Philadelphia Electric Co.) [50-353]	Pottstown, PA	GE	Boiling water	1055.0	3293.0	89 08
Millstone Nuclear Power Station, Unit 2 (Northeast Utilities) [50-336]	Waterford, CT	CE	Pressurized water	873.0	2700.0	75 10
Millstone Nuclear Power Station, Unit 3 (Northeast Utilities) [50-423]	Waterford, CT	West.	Pressurized water	1137.0	3411.0	86 01
Monticello Nuclear Generating Plant (Northern States Power Co.) [50-263]	Monticello, MN	GE	Boiling water	536.0	1670.0	70 12
Nine Mile Point Nuclear Station, Unit 1 (Niagara Mohawk Power Corp.) [50-220]	Scriba, NY	GE	Boiling water	565.0	1850.0	69 09
Nine Mile Point Nuclear Station, Unit 2 (Niagara Mohawk Power Corp.) [50-410]	Scriba, NY	GE	Boiling water	994.0	3323.0	87 05
North Anna Power Station, Unit 1 (Virginia Power) [50-338]	Mineral, VA	West.	Pressurized water	900.0	2893.0	78 04
North Anna Power Station, Unit 2 (Virginia Power) [50-339]	Mineral, VA	West.	Pressurized water	887.0	2893.0	80 06
Oconee Nuclear Station, Unit 1 (Duke Power) [50-269]	Seneca, SC	B&W	Pressurized water	846.0	2568.0	73 04
Oconee Nuclear Station, Unit 2 (Duke Power) [50-270]	Seneca, SC	B&W	Pressurized water	846.0	2568.0	73 11
Oconee Nuclear Station, Unit 3 (Duke Power) [50-287]	Seneca, SC	B&W	Pressurized water	846.0	2568.0	74 09
Oyster Creek Nuclear Power Plant, Unit 1 (GPU Nuclear Corp.) [50-219]	Toms River, NJ	GE	Boiling water	610.0	1930.0	69 05
Palisades Nuclear Plant, Unit 1 (Consumers Energy Co.) [50-255]	South Haven, MI	CE	Pressurized water	730.0	2530.0	71 05
Palo Verde Nuclear Generating Station, Unit 1 (Arizona Public Service Co.) [50-528]	Wintersburg, AZ	CE	Pressurized water	1221.0	3800.0	85 05
Palo Verde Nuclear Generating Station, Unit 2 (Arizona Public Service Co.) [50-529]	Wintersburg, AZ	CE	Pressurized water	1221.0	3800.0	86 04
Palo Verde Nuclear Generating Station, Unit 3 (Arizona Public Service Co.) [50-530]	Wintersburg, AZ	CE	Pressurized water	1304.0	3817.0	87 10
Peach Bottom Atomic Power Station, Unit 2 (PECO Energy Co.) [50-277]	Lancaster, PA	GE	Boiling water	1055.0	3293.0	73 09
Peach Bottom Atomic Power Station, Unit 3 (PECO Energy Co.) [50-278]	Lancaster, PA	GE	Boiling water	1035.0	3293.0	74 08

1. POWER REACTORS

PART I CIVILIAN REACTORS (DOMESTIC)

A. Central-Station Electric Power Plants (Continued)

Name (licensee) [docket number]	Location	Principal nuclear contractor	Type	Power MD capacity net MW(e)	Power Licensed MW(t)	Initial criticality (yr mo)	Comment
OPERABLE (Continued)							
Perry Nuclear Power Plant, Unit 1 (First Energy) [50-440]	Perry, OH	GE	Boiling water	1166.0	3579.0	86 06	
Pilgrim Nuclear Power Station, Unit 1 (Entergy Operations, Inc.) [50-293]	Plymouth, MA	GE	Boiling water	670.0	1998.0	72 06	
Point Beach Nuclear Plant, Unit 1 (Wisconsin Electric Power Co.) [50-266]	Two Creeks, WI	West.	Pressurized water	485.0	1519.0	70 11	
Point Beach Nuclear Plant, Unit 2 (Wisconsin Electric Power Co.) [50-301]	Two Creeks, WI	West.	Pressurized water	485.0	1519.0	72 05	
Prairie Island Nuclear Generating Plant, Unit 1 (Northern States Power Co.) [50-282]	Red Wing, MN	West.	Pressurized water	513.0	1650.0	73 12	
Prairie Island Nuclear Generating Plant, Unit 2 (Northern States Power Co.) [50-306]	Red Wing, MN	West.	Pressurized water	512.0	1650.0	74 12	
Quad-Cities Station, Unit 1 (Commonwealth Edison Co.) [50-254]	Cordova, IL	GE	Boiling water	769.0	2511.0	71 10	
Quad-Cities Station, Unit 2 (Commonwealth Edison Co.) [50-265]	Cordova, IL	GE	Boiling water	769.0	2511.0	72 04	
River Bend Station, Unit 1 (Entergy Operations Inc.) [50-458]	St. Francisville, LA	GE	Boiling water	936.0	2894.0	85 10	
Robert Emmett Ginna Nuclear Power Plant, Unit 1 (Rochester Gas & Electric Corp.) [50-244]	Ontario, NY	West.	Pressurized water	470.0	1520.0	69 11	
Salem Nuclear Generating Station, Unit 1 (Public Service Electric & Gas Co.) [50-272]	Salem, NJ	West.	Pressurized water	1106.0	3411.0	76 12	
Salem Nuclear Generating Station, Unit 2 (Public Service Electric & Gas Co.) [50-311]	Salem, NJ	West.	Pressurized water	1106.0	3411.0	80 08	
San Onofre Nuclear Generating Station, Unit 2 (Southern California Edison Co. and San Diego Gas & Electric Co.) [50-361]	San Clemente, CA	CE	Pressurized water	1070.0	3390.0	82 07	
San Onofre Nuclear Generating Station, Unit 3 (Southern California Edison Co. and San Diego Gas & Electric Co.) [50-362]	San Clemente, CA	CE	Pressurized water	1080.0	3390.0	83 08	
Seabrook Nuclear Station, Unit 1 (North Atlantic Energy Service Corp.) [50-443]	Seabrook, NH	West.	Pressurized water	1150.0	3411.0	89 06	
Sequoyah Nuclear Plant, Unit 1 (Tennessee Valley Authority) [50-327]	Daisy, TN	West.	Pressurized water	1122.0	3411.0	80 07	
Sequoyah Nuclear Plant, Unit 2 (Tennessee Valley Authority) [50-328]	Daisy, TN	West.	Pressurized water	1122.0	3411.0	81 11	
Shearon Harris Nuclear Power Plant, Unit 1 (Carolina Power & Light Co.) [50-400]	Bonsal, NC	West.	Pressurized water	860.0	2775.0	87 01	
South Texas Project, Unit 1 (South Texas Project Nuclear Operating Co.) [50-498]	Bay City, TX	West.	Pressurized water	1251.0	3800.0	88 03	
South Texas Project, Unit 2 (South Texas Project Nuclear Operating Co.) [50-499]	Bay City, TX	West.	Pressurized water	1251.0	3800.0	89 03	
St. Lucie Plant, Unit 1 (Florida Power & Light Co.) [50-335]	Fort Pierce, FL	CE	Pressurized water	839.0	2700.0	76 04	

St. Lucie Plant, Unit 2 (Florida Power & Light Co.) [50-389]	Fort Pierce, FL	CE	Pressurized water	839.0	2700.0	83 06
Surry Power Station, Unit 1 (Virginia Power) [50-280]	Gravel Neck, VA	West.	Pressurized water	781.0	2441.0	72 07
Surry Power Station, Unit 2 (Virginia Power) [50-281]	Gravel Neck, VA	West.	Pressurized water	781.0	2441.0	73 03
Susquehanna Steam Electric Station, Unit 1 (PP&L, Inc.) [50-387]	Berwick, PA	GE	Boiling water	1040.0	3293.0	82 09
Susquehanna Steam Electric Station, Unit 2 (PP&L, Inc.) [50-388]	Berwick, PA	GE	Boiling water	1044.0	3293.0	84 05
Three Mile Island Nuclear Station, Unit 1 (GPU Nuclear Corp.) [50-289]	Middletown, PA	B&W	Pressurized water	786.0	2568.0	74 06
Turkey Point Plant, Unit 3 (Florida Power & Light Co.) [50-250]	Florida City, FL	West.	Pressurized water	666.0	2200.0	72 10
Turkey Point Plant, Unit 4 (Florida Power & Light Co.) [50-251]	Florida City, FL	West.	Pressurized water	666.0	2200.0	73 06
Vermont Yankee Nuclear Power Station (Vermont Yankee Nuclear Power Corp.) [50-271]	Vernon, VT	GE	Boiling water	504.0	1593.0	72 03
Virgil C. Summer Nuclear Station, Unit 1 (South Carolina Electric & Gas Co.) [50-395]	Jenkinsville, SC	West.	Pressurized water	885.0	2775.0	82 10
Washington Nuclear Project, Unit 2 (Washington Public Power Supply System) [50-397]	Richland, WA	GE	Boiling water	1086.0	3323.0	84 01
Waterford Generating Station, Unit 3 (Entergy Operations Inc.) [50-382]	Taft, LA	CE	Pressurized water	1075.0	3390.0	85 03
Watts Bar Nuclear Plant, Unit 1 (Tennessee Valley Authority) [50-390]	Spring City, TN	West.	Pressurized water	1165.0	3411.0	96 02
William B. McGuire Nuclear Station, Unit 1 (Duke Power Co.) [50-369]	Cowans Ford Dam, NC	West.	Pressurized water	1129.0	3411.0	81 08
William B. McGuire Nuclear Station, Unit 2 (Duke Power Co.) [50-370]	Cowans Ford Dam, NC	West.	Pressurized water	1129.0	3411.0	83 05
Wolf Creek Generating Station (Wolf Creek Nuclear Operating Corp.) [50-482]	Burlington, KS	West.	Pressurized water	1134.0	3565.0	85 05

Name (licensee) [docket number]	Location	Principal nuclear contractor	Type	Design, electrical power net MW(e)	Design, thermal power net MW(t)	Estimated initial criticality (yr mo)	Comment
BEING BUILT							
Bellefonte Nuclear Plant, Unit 1 (Tennessee Valley Authority) [50-438]	Scottsboro, AL	B&W	Pressurized water	1235.0	3760.0	Indef.	Construction suspended.
Bellefonte Nuclear Plant, Unit 2 (Tennessee Valley Authority) [50-439]	Scottsboro, AL	B&W	Pressurized water	1235.0	3760.0	Indef.	Construction suspended.
Watts Bar Nuclear Plant, Unit 2 (Tennessee Valley Authority) [50-391]	Spring City, TN	West.	Pressurized water	1165.0	3411.0	Indef.	Construction suspended.

PART I CIVILIAN REACTORS (DOMESTIC)

1. POWER REACTORS

B. Dual-Purpose Plants

(No reactors currently in this category)

C. Propulsion (Maritime)

(No reactors currently in this category)

2. EXPERIMENTAL POWER-REACTOR SYSTEMS

A. Electric-Power Systems

(No reactors currently in this category)

B. Space Nuclear Auxiliary Power (SNAP)

(No reactors currently in this category)

C. Space Propulsion

(No reactors currently in this category)

3. TEST, RESEARCH, AND UNIVERSITY REACTORS

A. General Irradiation Test

Name (Regulatory agency). Location	Power capacity net kW(e)	Power licensed kW(t)	Authorized power kW(t)	Power MD capacity net MW(e)	Power licensed MW(T)	Initial criticality (yr mo)	Desig. Type. Principal nucl. contr.		Comment
OPERABLE									
Advanced Test Reactor (DOE). INEEL, ID			250,000.0			68 00	ATR. Tank. LMITCO	Operating.	

B. High-Power Research and Test

Name (Regulatory agency). Location	Power capacity net kW(e)	Power licensed kW(t)	Authorized power kW(t)	Power MD capacity net MW(e)	Power licensed MW(T)	Initial criticality (yr mo)	Desig. Type. Principal nucl. contr.	Comment
OPERABLE								
Brookhaven Medical Research Reactor (DOE). Upton, NY			3,000.0			59 00	BMRR. Tank. Daystrom	
High Flux Beam Reactor (DOE). Upton, NY			30,000.0			65 10	HFBR. Heavy water. BNL	Power derated subject to further safety tests. Reactor is currently shutdown. Restart is pending.
High Flux Isotope Reactor (DOE). Oak Ridge, TN			85,000.0			65 00	HFIR. Tank flux trap. ORNL	Operating.
National Institute of Standards & Technology (NRC). Gaithersburg, MD			20,000.0			67 00	NIST. Heavy water. NBS-B&R	Operating.

C. Safety Research and Test

(No reactors currently in this category)

D. General Research

OPERABLE

Aerotest Operations, Inc. (NRC). San Ramon, CA			250.0			65 00	AGNIR. Pool-TRIGA core. GA	
Dow Chemical Co. (NRC). Midland, MI			300.0			67 00	TRIGA-Mk I. U–Zr hydride. GA	
General Atomics, Advanced TRIGA-Mk F Prototype Reactor (NRC). La Jolla, CA			1,500.0			60 00	TRIGA-Mk F. U-Zr hydride. Owner	Possession only license, 3/22/95. Decommissioning amendment issued, 8/12/99.
General Atomics, TRIGA-Mk I Prototype Reactor (NRC). La Jolla, CA			250.0			58 00	TRIGA-Mk I. U-ZR hydride. Owner	Possession only license issued, 10/29/97. Decommissioning amendment issued, 8/12/99.
General Electric Nuclear Test Reactor (NRC). Pleasanton, CA			100.0			57 00	NTR. LWR. GE	
Neutron Radiography Facility (DOE). INEEL, ID			250.0			77 00	NRAD. Pool-TRIGA core. ANL	
Omaha Veterans Administration Hospital (NRC). Omaha, NE			18.0			59 00	TRIGA-Mk I. U–Zr hydride. GA	
Rhode Island Nuclear Science Center (NRC). Narrangansett, RI			2,000.0			64 00	RINSC. Pool. RI	
Sandia Pulsed Reactor II (DOE). Kirtland AFB, East, NM			25.0			67 00	SPR-II. Bare metal fast burst. Sandia	Pulse, steady state.

D. General Research (Continued)

Name (Regulatory agency). Location	Power capacity net kW(e)	Power licensed kW(t)	Authorized power kW(t)	Power MD capacity net MW(e)	Power licensed MW(T)	Initial criticality (yr mo)	Desig. Type. Principal nucl. contr.	Comment
Sandia Pulsed Reactor III (DOE). Kirtland AFB, East, NM			25.0			75 00	SPR-III. Bare metal fast burst. Sandia	Pulse, steady state.
SNL Annular Core Research Reactor (DOE). Kirtland AFB, East, NM			2,000.0	4kw pulsed		78 00	ACRR. Pool–UO_2 BeO core. Sandia	Pulse, computer transient steady state.
U.S. Geological Survey Laboratory (Department of the Interior) (NRC). Denver, CO			1,000.0			69 00	TRIGA-Mk I. U–Zr hydride. GA	

E. University Research and Teaching

OPERABLE

Arizona, University of (NRC). Tucson, AZ			100.0			58 00	TRIGA-Mk I. U-Zr hydride. GA	
California, Irvine, University of (NRC). Irvine, CA			250.0			69 00	TRIGA-Mk I. U-Zr hydride. GA	
Cornell University (NRC). Ithaca, NY			500.0			62 00	TRIGA-Mk II. U-Zr hydride. GA	
Cornell University Zero Power Reactor (NRC). Ithaca, NY						62 00	ZPR. Tank. Vitro	Possession only license, 2/12/97.
Florida, University of (NRC). Gainesville, FL			100.0			59 00	UFTR. Graphite/water. GNEC	
Georgia Institute of Technology (NRC). Atlanta, GA			5,000.0			64 00	GTRR. Heavy water. GNEC	Possession only license issued, 4/2/98. Decommissioning amendment issued, 7/22/99.
Idaho State University (NRC). Pocatello, ID						67 00	AGN-201P-103. Homog. solid. AGN	The AGN-201P-103 was operated at San Ramon, CA, by Aerojet-General Corporation from 1957 to 1966. In 4/67 Idaho State University applied for a license to operate the reactor at Pocatello, ID. Authorized power is negligible.
Illinois, University of (NRC). Urbana, IL			10.0			71 00	LOPRA. U-Zr hydride. GA	DECON approved.
Illinois, University of (NRC). Champaign–Urbana, IL			1,500.0			60 00	TRIGA-Mk II. U-Zr hydride. GA	Possession only license issued, 4/12/99. Decommissioning amendment issued, 9/22/99.
Iowa State University (NRC). Ames, IA			10.0			59 00	UTR-10. Graphite/water. AS Inc.	Possession only license issued, 3/2/99.
Kansas State University (NRC). Manhattan, KS			250.0			62 00	TRIGA-Mk II. U-Zr hydride. GA	

Manhattan College (NRC). New York, NY		64 00	MCZPR. Tank. AMF	Authorized power is negligible. Decommissioning amendment issued, 3/23/99.
Maryland, University of (NRC). College Park, MD	250.0	74 00	TRIGA. Tank-TRIGA core. GA	
Massachusetts, University of (NRC). Lowell, MA	1,000.0	74 00	ULR. Pool. GE	
Massachusetts Institute of Technology (NRC). Cambridge, MA	5,000.0	58 00	MITR-II. Heavy-water reflected. ACF	
Michigan, University of (Ford Nuclear Reactor) (NRC). Ann Arbor, MI	2,000.0	57 00	FNR. Pool. B&W	
Missouri at Rolla, University of (NRC). Rolla, MO	200.0	61 00	UMR-R. Pool. CW	
Missouri, University of (NRC). Columbia, MO	10,000.0	66 00	MURR. Tank. Owner-IC	
New Mexico, University of (NRC). Albuquerque, NM		66 00	AGN-201M-112. Homog. Solid. AGN	AGN-201M-112 was operated at the University of California, Berkeley, beginning in 1957. The University of New Mexico filed an application in 4/66 for transfer and reconstruction of the reactor at a site on its campus. The reactor achieved criticality at the University of New Mexico on 10/7/66. Authorized power is negligible.
North Carolina State University (NRC). Raleigh, NC	1,000.0	72 00	PULSTAR. Pool. AMF	
Ohio State University (NRC). Columbus, OH	500.0	61 00	OSURR. Pool. Lockheed	
Oregon State University (NRC). Corvallis, OR	1,000.0	67 00	OSTR. U-Zr hydride. GA	
Penn State TRIGA Reactor (NRC). University Park, PA	1,000.0	65 00	PSTR. Pool-TRIGA core. GA	Owner: Pennsylvania State University. From 1955 to 1965, the Penn State reactor was operated as a 200-kW(t) pool-type reactor fueled with MTR-type elements.
Purdue University (NRC). West Lafayette, IN	1.0	62 00	PUR-1. Pool. Lockheed	
Reed College (NRC). Portland, OR	250.0	68 00	TRIGA-Mk I. U-Zr hydride. GA	
State University of New York (NRC). Buffalo, NY	2,000.0	61 00	PULSTAR. Pool. AMF	The State University of New York at Buffalo reactor ceased operation 6/94, and the licensee is planning to decommission. Possession only license issued, 6/19/97.
Texas A&M University (NRC). College Station, TX		57 00	AGN-201M-106. Homog. solid. AGN	Authorized power is negligible.
Texas A&M University (NRC). College Station, TX	1,000.0	61 00	TRIGA. U-Zr hydride. GA	The Nuclear Science Center Reactor at Texas A&M University has been modified for 1000-kW steady-state operation with a TRIGA-type core. Power level was 100 kW prior to modification in 1968.
Texas at Austin, University of (NRC). Austin, TX	1,100.0	89 00	TRIGA-Mk II. U-Zr hydride. GA	

3. TEST, RESEARCH, AND UNIVERSITY REACTORS

PART I CIVILIAN REACTORS (DOMESTIC)

E. University Research and Teaching (Continued)

Name (Regulatory agency). Location	Power capacity net kW(e)	Power licensed kW(t)	Authorized power kW(t)	Power MD capacity net MW(e)	Power licensed MW(T)	Initial criticality (yr mo)	Desig. Type. Principal nucl. contr.	Comment
Utah, University of (NRC). Salt Lake City, UT			100.0			75 00	TRIGA-Mk I. U-Zr hydride. GA	
Virginia, University of (NRC). Charlottesville, VA			2,000.0			60 00	UVAR. Pool. Owner-B&W	Ceased operation, 7/1/98.
Washington State University (NRC). Pullman, WA			1,000.0			67 00	WSTR. Pool-TRIGA core. GA	In 1967 the original MTR-type core of the Washington State University reactor was replaced by a modified TRIGA-type core and control system, and the steady-state power level was increased from 100 to 1000 kW(t).
Wisconsin, University of (NRC). Madison, WI			1,000.0			67 00	TRIGA. Pool-TRIGA core. GA	The University of Wisconsin reactor has been modified for 1000-kW steady-state operation with a TRIGA-type core. Power level was 250 kW prior to modification in 1967.
Worcester Polytechnic Institute (NRC). Worcester, MA			10.0			59 00	No Desg. Pool. GE	

1. MATERIALS PRODUCTION

PART II PRODUCTION REACTORS

(No reactors currently in this category)

2. PROCESS DEVELOPMENT

(No reactors currently in this category)

PART III MILITARY REACTORS

1. DEFENSE POWER-REACTOR APPLICATIONS

A. Remote Installations

(No reactors currently in this category)

B. Propulsion (Naval)

The abbreviations used here are defined as follows:
SSN, Submarine (Nuclear Propulsion)
SSBN, Fleet Ballistic Missile Submarine (Nuclear Propulsion)
CGN, Guided Missile Cruiser (Nuclear Propulsion)
CVN, Aircraft Carrier (Nuclear Propulsion)

Name (all owned by U.S. Navy)	Designation	Shipbuilder	Startup	Comment
OPERABLE				
DANIEL WEBSTER	ex-SSBN626	Electric Boat (Groton)	64 00	Removed from sea-going service and converted to training platform.
SAM RAYBURN	ex-SSBN635	Newport News	64 00	Removed from sea-going service and converted to training platform.
USS KAMEHAMEHA	SSN642	Mare Island	65 00	
USS JAMES K. POLK	SSN645	Electric Boat (Groton)	66 00	
USS POGY	SSN647	NYSC/Ingalls	70 00	
USS HAWKBILL	SSN666	Mare Island	70 00	
USS NARWHAL	SSN671	Electric Boat (Groton)	69 00	
USS TREPANG	SSN674	Electric Boat (Groton)	70 00	
USS BILLFISH	SSN676	Electric Boat (Groton)	70 00	
USS WILLIAM H. BATES	SSN680	Ingalls	72 00	
USS PARCHE	SSN683	Ingalls	74 00	
USS L. MENDELL RIVERS	SSN686	Newport News	74 00	
USS LOS ANGELES	SSN688	Newport News	76 00	
USS PHILADELPHIA	SSN690	Electric Boat (Groton)	76 00	
USS MEMPHIS	SSN691	Newport News	77 00	
USS BREMERTON	SSN698	Electric Boat (Groton)	79 00	
USS JACKSONVILLE	SSN699	Electric Boat (Groton)	79 00	
USS DALLAS	SSN700	Electric Boat (Groton)	80 00	
USS LA JOLLA	SSN701	Electric Boat (Groton)	81 00	
USS BOSTON	SSN703	Electric Boat (Groton)	81 00	
USS CITY OF CORPUS CHRISTI	SSN705	Electric Boat (Groton)	82 00	
USS ALBUQUERQUE	SSN706	Electric Boat (Groton)	82 00	
USS PORTSMOUTH	SSN707	Electric Boat (Groton)	83 00	
USS MINNEAPOLIS-SAINT PAUL	SSN708	Electric Boat (Groton)	83 00	
USS HYMAN G. RICKOVER	SSN709	Electric Boat (Groton)	84 00	
USS AUGUSTA	SSN710	Electric Boat (Groton)	84 00	
USS SAN FRANCISCO	SSN711	Newport News	80 00	

1. DEFENSE POWER-REACTOR APPLICATIONS

B. Propulsion (Naval) (Continued)

Name (all owned by U.S. Navy)	Designation	Shipbuilder	Startup
USS ATLANTA	SSN712	Newport News	81 00
USS HOUSTON	SSN713	Newport News	82 00
USS NORFOLK	SSN714	Newport News	83 00
USS BUFFALO	SSN715	Newport News	83 00
USS SALT LAKE CITY	SSN716	Newport News	83 00
USS OLYMPIA	SSN717	Newport News	84 00
USS HONOLULU	SSN718	Newport News	85 00
USS PROVIDENCE	SSN719	Electric Boat (Groton)	85 00
USS PITTSBURGH	SSN720	Electric Boat (Groton)	85 00
USS CHICAGO	SSN721	Newport News	86 00
USS KEY WEST	SSN722	Newport News	87 00
USS OKLAHOMA CITY	SSN723	Newport News	87 00
USS LOUISVILLE	SSN724	Electric Boat (Groton)	86 00
USS HELENA	SSN725	Electric Boat (Groton)	87 00
USS OHIO	SSBN726	Electric Boat (Groton)	80 00
USS MICHIGAN	SSBN727	Electric Boat (Groton)	82 00
USS FLORIDA	SSBN728	Electric Boat (Groton)	82 00
USS GEORGIA	SSBN729	Electric Boat (Groton)	83 00
USS HENRY M. JACKSON	SSBN730	Electric Boat (Groton)	84 00
USS ALABAMA	SSBN731	Electric Boat (Groton)	84 00
USS ALASKA	SSBN732	Electric Boat (Groton)	85 00
USS NEVADA	SSBN733	Electric Boat (Groton)	86 00
USS TENNESSEE	SSBN734	Electric Boat (Groton)	87 00
USS PENNSYLVANIA	SSBN735	Electric Boat (Groton)	88 00
USS WEST VIRGINIA	SSBN736	Electric Boat (Groton)	90 00
USS KENTUCKY	SSBN737	Electric Boat (Groton)	90 00
USS MARYLAND	SSBN738	Electric Boat (Groton)	91 00
USS NEBRASKA	SSBN739	Electric Boat (Groton)	93 00
USS RHODE ISLAND	SSBN740	Electric Boat (Groton)	94 00
USS MAINE	SSBN741	Electric Boat (Groton)	95 00
USS WYOMING	SSBN742	Electric Boat (Groton)	96 00
USS LOUISIANA	SSBN743	Electric Boat (Groton)	97 00
USS NEWPORT NEWS	SSN750	Newport News	88 00
USS SAN JUAN	SSN751	Electric Boat (Groton)	87 00
USS PASADENA	SSN752	Electric Boat (Groton)	88 00
USS ALBANY	SSN753	Newport News	89 00
USS TOPEKA	SSN754	Electric Boat (Groton)	89 00
USS MIAMI	SSN755	Electric Boat (Groton)	89 00
USS SCRANTON	SSN756	Newport News	90 00
USS ALEXANDRIA	SSN757	Electric Boat (Groton)	91 00
USS ASHEVILLE	SSN758	Newport News	91 00
USS JEFFERSON CITY	SSN759	Newport News	91 00
USS ANNAPOLIS	SSN760	Electric Boat (Groton)	91 00
USS SPRINGFIELD	SSN761	Electric Boat (Groton)	92 00

USS COLUMBUS	SSN762	Electric Boat (Groton)	93 00
USS SANTA FE	SSN763	Electric Boat (Groton)	93 00
USS BOISE	SSN764	Newport News	92 00
USS MONTPELIER	SSN765	Newport News	92 00
USS CHARLOTTE	SSN766	Newport News	94 00
USS HAMPTON	SSN767	Newport News	93 00
USS HARTFORD	SSN768	Electric Boat (Groton)	94 00
USS TOLEDO	SSN769	Newport News	94 00
USS TUCSON	SSN770	Newport News	94 00
USS COLUMBIA	SSN771	Electric Boat (Groton)	95 00
USS GREENVILLE	SSN772	Newport News	95 00
USS CHEYENNE	SSN773	Newport News	95 00
USS SEAWOLF	SSN21	Electric Boat (Groton)	95 00
USS CONNECTICUT	SSN22	Electric Boat (Groton)	98 00
USS ENTERPRISE (8 reactors)	CVN65	Newport News	60 00
USS NIMITZ (2 reactors)	CVN68	Newport News	74 00
USS DWIGHT D. EISENHOWER (2 reactors)	CVN69	Newport News	77 00
USS CARL VINSON (2 reactors)	CVN70	Newport News	81 00
USS THEODORE ROOSEVELT (2 reactors)	CVN71	Newport News	86 00
USS ABRAHAM LINCOLN (2 reactors)	CVN72	Newport News	89 00
USS GEORGE WASHINGTON (2 reactors)	CVN73	Newport News	92 00
USS JOHN C. STENNIS (2 reactors)	CVN74	Newport News	95 00
USS HARRY TRUMAN	CVN75	Newport News	98 00
Deep Submergence Research Vehicle	NR-1	Electric Boat (Groton)	69 00

BEING BUILT

JIMMY CARTER	SSN23	Electric Boat (Groton)
VIRGINIA	SSN774	Electric Boat (Groton)
RONALD REAGAN (2 reactors)	CVN76	Newport News

2. DEVELOPMENTAL POWER

A. Electric-Power Experiments and Prototypes

(No reactors currently in this category)

2. DEVELOPMENTAL POWER

PART III MILITARY REACTORS

B. Propulsion Experiments and Prototypes

Name (Owner). Location	Designation	Power capacity net kW(e)	Authorized power kW(t)	Initial criticality (yr mo)	Reactor type. Principal nuclear contractor	Comment
OPERABLE						
Modifications and Additions to Reactor Facility (DOE). West Milton, NY	MARF			76 00	Pressurized water. Lockheed Martin. (Formerly GE).	
Trident Prototype, (DOE). West Milton, NY	S8G			78 00	Pressurized water. Lockheed Martin. (Formerly GE).	

3. TEST AND RESEARCH

A. Test

(No reactors currently in this category)

B. Research

Name (Owner). Location	Designation	Power capacity net kW(e)	Authorized power kW(t)	Initial criticality (yr mo)	Reactor type. Principal nuclear contractor	Comment
OPERABLE						
Armed Forces Radiobiology Research Institute, DNA (DOD). Regulated by NRC. Bethesda, MD	AFRRI		1,100.0	62 00	TRIGA-Mk F. GA	
Army Pulse Radiation Facility, Test and Evaluation Command (USA). Aberdeen, MD	APRF		10.0	68 07	Bare, fast, prompt burst. UNC	
Fast Burst Reactor Facility, Test and Evaluation Command (USA). White Sands, NM	FBRF		10.0	64 08	Bare, fast, prompt burst. Kaman	
McClellan Nuclear Radiation Center (USAF). McClellan AFB, CA	MNRC		2,300.0	91 01	TRIGA Mod Mark II. GA.	University of California-Davis took possession of the reactor 11/99.

1. POWER REACTORS

PART IV EXPORT REACTORS

A. Central-Station Electric Power Plants

Reactor Name (Owner). Location	NRC export license No. and date	Principal nuclear contractor. Reactor type	Power design net MW(e)	Power MW(t)	Author-ized power kW(t)	Initial criti-cality (yr mo)	Comment
OPERABLE							
Belgium, Doel, Unit 1. Antwerp (Electrabel)		West. Pressurized water	392.0	1,192.0		74 07	
Belgium, Doel, Unit 2. Antwerp (Electrabel)		West. Pressurized water	392.0	1,192.0		75 08	
Belgium, Doel, Unit 4. Antwerp (Electrabel)		West. Pressurized water	1,006.0	3,000.0		85 03	
Belgium, Tihange, Unit 1. Huy, Liege (Electrabel)		West./Fram. ACEC Pressurized water	870.0	2,660.0		75 02	
Belgium, Tihange, Unit 3. Huy, Liege (Electrabel)		West. Pressurized water	1,006.0	3,000.0		85 06	
Brazil, Angra 1, Central Electricia de Furnas. Angra dos Reis (Electronuclear)	XR-081 04/13/73	West. Pressurized water	626.0	1,882.0		82 03	
India, Tarapur Nuclear Power Station, Unit 1. Tarapur (near Bombay)	XR-054 07/07/64	GE. Boiling water	200.0	707.0		69 02	
India, Tarapur Nuclear Power Station, Unit 2. Tarapur (near Bombay)	XR-054 07/07/64	GE. Boiling water	200.0	707.0		69 02	
Japan, Fukushima Dai-ichi Power Station, Unit 1 (Tokyo Electric Power Co.). Okuma, Fukushima Pref.	XR-066 08/15/67	GE. Boiling water	439.0	1,380.0		70 10	
Japan, Fukushima Dai-ichi Power Station, Unit 2 (Tokyo Electric Power Co.). Okuma, Fukushima Pref.	XR-072 04/22/70	GE, Toshiba. Boiling water	760.0	2,381.0		73 05	
Japan, Fukushima Dai-ichi Power Station, Unit 6 (Tokyo Electric Power Co.). Futaba, Fukushima Pref.	XR-084 05/25/73	GE, Toshiba. Boiling water	1,067.0	3,293.0		79 03	
Japan, Kashiwazaki-Kariwa, Unit 6 (Tokyo Electric Power Co.). Kashiwazaki, Niigata Pref.		GE, Toshiba, Hitachi. Advanced boiling water	1,315.0	3,926.0		95 12	
Japan, Kashiwazaki-Kariwa, Unit 7 (Tokyo Electric Power Co.). Kashiwazaki, Niigata Pref.		GE, Hitachi, Toshiba. Advanced boiling water	1,315.0	3,926.0		97 07	
Japan, Mihama Power Station, Unit 1 (Kansai Electric Power Co.). Mihama, Fukui Pref.	XR-067 08/15/67	West., Mitsubishi. Pressurized water	320.0	1,031.0		70 07	
Japan, Ohi Power Station, Unit 1 (Kansai Electric Power Co.). Ohi, Fukui Pref.	XR-082 04/17/73	West., Mitsubishi. Pressurized water	1,120.0	3,423.0		77 12	
Japan, Ohi Power Station, Unit 2 (Kansai Electric Power Co.). Ohi, Fukui Pref.	XR-082 04/17/73	West., Mitsubishi. Pressurized water	1,120.0	3,423.0		78 09	
Japan, Takahama Power Station, Unit 1 (Kansai Electric Power Co.). Takahama, Fukui Pref.	XR-079 07/23/71	West., Mitsubishi. Pressurized water	780.0	2,440.0		74 03	

1. POWER REACTORS

PART IV EXPORT REACTORS

A. Central-Station Electric Power Plants (Continued)

Reactor Name (Owner). Location	NRC export license No. and date	Principal nuclear contractor. Reactor type	Power design net MW(e)	Power MW(t)	Author-ized power kW(t)	Initial criti-cality (yr mo)	Comment
Japan, Tokai No. 1 Power Station (Japan Atomic Power Co.). Tokai-Mura, Ibaraki Pref.		GE GCR	159.0			65 04	Commerical operation, 7/66
Japan, Tokai No. 2 Power Station (Japan Atomic Power Co.). Tokai-Mura, Ibaraki Pref.	XR-085 05/25/73	GE, Hitachi, Shimizu. Boiling water	1,056.0	3,293.0		78 01	
Japan, Tsuruga Power Station, Unit 1 (Japan Atomic Power Co.). Tsuruga, Fukui Pref.	XR-065 06/22/67	GE. Boiling water	341.0	1,064.0		69 10	
Korea, Kori-1 (Korea Electric Power Co.). Kori (near Pusan)	XR-083 05/04/73	West. Pressurized water	564.0	1,729.0		77 06	Formerly, Korea, Unit 1.
Korea, Kori-2 (Korea Electric Power Co.). Kori (near Pusan)	XR-119 04/08/77	West. Pressurized water	605.0	1,876.0		83 04	Formerly, Korea, Unit 2.
Korea, Kori-3 (Korea Electric Power Co.). Kori (near Pusan)	XR-131 10/04/78	West. Pressurized water	900.0	2,775.0		85 01	Formerly, Korea, Unit 5.
Korea, Kori-4 (Korea Electric Power Co.). Kori (near Pusan)	XR-131 10/04/78	West. Pressurized water	900.0	2,775.0		85 10	Formerly, Korea, Unit 6.
Korea, Ulchin 3 (Korea Electric Power Co.). Kuongsangbuk-do	XR-153 04/06/92	CE Pressurized water	950.0	2825.0		97 12	
Korea, Yonggwang-1 (Korea Electric Power Co.). Gyema (near Kwang Ju)	XR-133 09/22/80	West. Pressurized water	900.0	2,775.0		86 01	Formerly, Korea, Unit 7.
Korea, Yonggwang-2 (Korea Electric Power Co.). Gyema (near Kwang Ju)	XR-133 09/22/80	West. Pressurized water	900.0	2,777.0		87 10	Formerly, Korea, Unit 8.
Korea, Yonggwang-3 (Korea Electric Power Co.). Gyema (near Kwang Ju)	XR-150 04/16/87	CE Pressurized water	900.0			94 10	Also, Korea, Unit 11.
Korea, Yonggwang-4 (Korea Electric Power Co.). Gyema (near Kwang Ju)	XR-150 04/16/87	CE Pressurized water	900.0			95 07	Also, Korea, Unit 12.
Mexico, Laguna Verde Station, Unit 1. Laguna Verde	XR-098 05/17/74	GE. Boiling water	654.0	1,931.0		88 11	Commercial operation, 7/29/90.
Mexico, Laguna Verde Station, Unit 2. Laguna Verde	XR-102 10/24/74	GE. Boiling water	654.0	1,931.0		94 09	Began commercial operation 4/95.
Slovenia, Krsko (Nuklearna Elektrarna Krsko). Krsko	XR-107 05/20/77	West. Pressurized water	615.0	1,882.0		81 09	
Spain, Almaraz, Unit 1 (Centrales Nucleares Del Norte, S.A.). Almaraz	XR-088 07/12/73	West. Pressurized water	902.0	2,696.0		81 04	
Spain, Almaraz, Unit 2 (Centrales Nucleares Del Norte, S.A.). Almaraz	XR-088 07/12/73	West. Pressurized water	902.0	2,696.0		83 09	
Spain, Asco, Unit 1 (Asociacion Nuclear Asco). Asco	XR-090 07/12/73	West. Pressurized water	902.0	2,696.0		83 06	
Spain, Asco, Unit 2 (Asociacion Nuclear Asco). Asco	XR-099 06/22/76	West. Pressurized water	902.0	2,696.0		85 09	

Spain, Cofrentes, Unit 1 (Hidroelectrica Espanola S.A.). Cofrentes	XR-097 06/10/74	GE Boiling water	975.0	2,900.0	84 08	
Spain, José Cabrera (Union Electrica, S.A.). Zorita de los Canes	XR-059 10/22/65	West. Pressurized water	160.0	510.0	68 06	
Spain, Santa Maria de Garoña (Centrales Nucleares del Norte, S.A., Nuclenor). S.M. Garoña Burgos	XR-064 06/09/67	GE. Boiling water	440.0	1,381.0	70 11	
Spain, Vandellos, Unit 2 (ENDESA). Tarragona	XR-122 09/13/87	West. Pressurized water	920.0	2,785.0	87 11	
Sweden, Ringhals, Unit 2 (Vattenfall AB). Väro (near Göteborg)	XR-069 05/09/69	West. Pressurized water	875.0	2,660.0	74 06	
Sweden, Ringhals, Unit 3 (Vattenfall AB). Väro(near Göteborg)	XR-095 02/02/74	West. Pressurized water	915.0	2,783.0	80 07	
Sweden, Ringhals, Unit 4 (Vattenfall AB). Väro (near Göteborg)	XR-103 10/21/75	West. Pressurized water	915.0	2,783.0	82 05	
Switzerland, Beznau, Unit 1 (Nordostschweizerische Kraftwerke AG). Döttingen	XR-063 02/03/67	West. Pressurized water	365.0	1,130.0	69 06	
Switzerland, Beznau, Unit 2 (Nordostschweizerische Kraftwerke AG). Döttingen	XR-070 11/05/69	Westinghouse Pressurized water	357.0	1,130.0	71 10	
Switzerland, Leibstadt (Kernkraftwerk Leibstadt). Leibstadt	XR-104 12/31/75	GE. Boiling water	1080.0	3,138.0	84 03	
Switzerland, Mühleberg (BKW FMB Energie AG). Mühleberg (near Bern)	XR-068 10/04/67	GE. Boiling water	355.0	997.0	71 03	
Taiwan, Chinshan, Unit 1 (Taiwan Power Co). Shihmen	XR-080 07/24/72	GE. Boiling water	604.0	1,775.0	77 10	
Taiwan, Chinshan, Unit 2 (Taiwan Power Co.). Shihmen	XR-080 07/24/72	GE. Boiling water	604.0	1,775.0	78 11	
Taiwan, Kuo Sheng, Unit 1 (Taiwan Power Co.). Wanli Hsiang	XR-096 04/17/74	GE. Boiling water	948.0	2,894.0	81 02	
Taiwan, Kuo Sheng, Unit 2 (Taiwan Power Co.). Wanli Hsiang	XR-096 04/17/74	GE. Boiling water	948.0	2,894.0	82 03	
Taiwan, Maanshan, Unit 1 (Taiwan Power Co.). Heng-chun	XR-113 06/08/79	West. Pressurized water	890.0	2,785.0	84 03	
Taiwan, Maanshan, Unit 2 (Taiwan Power Co.). Heng-chun	XR-113 06/08/79	West. Pressurized water	890.0	2,785.0	85 02	

BEING BUILT

Korea, Ulchin 4 (Korea Electric Power Co.). Kuongsangbuk-do	XR-153 04/06/92	CE Pressurized water	950.0	2825.0	98 12	
Korea, Yonggwang-5 (Korea Electric Power Co.). Chollanam Province	XR-162	CE, Hanjung Pressurized water	1,000.0		01 11	License pending.
Korea, Yonggwang-6 (Korea Electric Power Co.). Chollanam Province	XR-162	CE, Hanjung Pressurized water	1,000.0		02 07	License pending.
Spain, Lemoniz No. 1 (Iberduero) Vizcaya, Spain		West. Pressurized water	900.0			Suspended.

PART IV EXPORT REACTORS

1. POWER REACTORS

A. Central-Station Electric Power Plants (Continued)

Reactor Name (Owner). Location	NRC export license No. and date	Principal nuclear contractor. Reactor type	Power design net MW(e)	Power MW(t)	Author-ized power kW(t)	Initial criti-cality (yr mo)	Comment
Spain, Lemoniz No. 2 (Iberduero) Vizcaya, Spain		West.	900.0				Suspended.
Spain, Valdecaballeros No. 1 (Central Nuclear de Valdecaballeros) Badajoz, Spain		GE. Boiling water	975.0				Cancelled.
Spain, Valdecaballeros No. 2 (Central Nuclear de Valdecaballeros) Badajoz, Spain		GE. Boiling water	975.0				Cancelled.
PLANNED							
Taiwan, Unit 7 (Taiwan Power Co.). Lungmen	XR-135 01/16/97	GE. Advanced Boiling water	1,350.0				
Taiwan, Unit 8 (Taiwan Power Co.). Lungmen	XR-135 01/16/97	GE. Advanced Boiling water	1,350.0				

B. Propulsion

(No reactors currently in this category)

2. TEST, RESEARCH, AND TEACHING

A. General Irradiation Test

Reactor Name (Owner). Location	NRC export license No. and date	Principal nuclear contractor. Reactor type	Power design net MW(e)	Power MW(t)	Author-ized power kW(t)	Initial criti-cality (yr mo)	Comment
OPERABLE							
Japan, NSRR (Japan Atomic Energy Research Institute). Tokai-Mura, Ibaraki Pref.	XR-101 10/16/74	GA. TRIGA-ACPR			300.0	75 06	
Netherlands (Energy Center). Petten	XR-017 01/17/58	AC. Tank (MTR)			45,000.0	61 09	In 1985 the reactor vessel was replaced. It is now refurbished. Manufacturer of the vessel: Royal Schelde of Flushing (Vlissingen, Holland).

Romania (Institute for Nuclear Research). Bucharest	XR-091 06/29/73	GA TRIGA-ACPR	500.0	79 00	
Romania (Institute for Nuclear Research). Bucharest	XR-091 06/29/73	GA. TRIGA (MPR 16)	14,000.0	79 00	
South Africa, Safari-1 (Atomic Energy Board). Pelindaba (near Pretoria)	XR-042 06/14/61	AC. Tank	20,000.0	65 00	
Sweden (Studsvik AB). Studsvik	XR-019 05/14/58	AC. Tank (MTR)	50,000.0	60 00	

B. General Research

OPERABLE

Australia, Moata (Atomic Energy Commission). Lucas Heights, New South Wales	XR-039 09/12/60	AR. UTR-10	15.0	61 00	
Austria, Astra (Seibersdorf Research Center). Seibersdorf	XR-023 09/03/58	AMF. Pool	5,000.0	60 00	
Bangladesh (Institute of Nuclear Technology). Dhaka	XR-126 10/05/82	GA. TRIGA-Mk II	3,000.0	86 00	
Colombia, INEA-R1 (Institute of Nuclear Affairs). Bogotá	XR-164 09/25/96 XSNM-02858 02/05/97	GA. TRIGA^{W} Conversion	30.0	65 00	In 1996 NRC issued an export license to DOE to convert the reactor to use low-enriched uranium fuel.
Denmark, DR-1 (Risö National Laboratory). Risö	XR-005 04/04/57	AI. L-55	2.0	57 08	
Greece, Democritos (Atomic Energy Commission). Athens	XR-014 09/25/57	AMF. Pool	1,000.0	71 08	
Indonesia (National Atomic Energy Agency). Bandung	XR-048	GA. TRIGA-Mk II	2,000.0	64 10	The original Bandung TRIGA-Mark II reactor was commissioned at 250 kW(t) in 1964. It was upgraded and reached a power level of 1000 kW(t) in 1971 (XR-078, 5/20/71).Upgraded and reached power level of 2000 kW(t) in 1996.
Indonesia (National Atomic Energy Agency). Yogyakarta		GA. TRIGA-Mk II	250.0	79 01	This reactor was designed and built by BATAN (National Atomic Energy Agency of Indonesia). The design was based on the design of TRIGA Mark II reactor, with maximum power level of 250 kW. In 1979 this reactor reached initial criticality at 50 kW. After the upgrading and replacing of some components, it reached a power level of 100 kW in 1984.
Israel (Atomic Energy Commission). Nahal Soreq	XR-021 06/12/58	AMF. Pool	5,000.0	60 06	
Italy (Italian Agency for New Technology, Energy and the Environment). Rome	XR-026 01/08/59	GA. TRIGA-Mk II	1,000.0	60 06	
Jamaica (Kingston). Kingston	XR-094 06/03/75	Research reactor	20.0	84 03	Design power: 10W.
Malaysia (Tun Ismail Atomic Research Centre). Kuala Lumpur	XR-125 02/20/81	GA. TRIGA-Mk II	1,000.0	82 06	
Mexico (National Commission for Nuclear Energy). Salazar	XR-057 02/12/65	GA. TRIGA-Mk III	1,000.0	68 11	
Pakistan, PARR (Atomic Energy Commission). Islamabad	XR-046 04/23/62	AMF. Pool	5,000.0	65 12	

2. TEST, RESEARCH, AND TEACHING

B. General Research (Continued)

Reactor Name (Owner). Location	NRC export license No. and date	Principal nuclear contractor. Reactor type	Power design net MW(e)	Power MW(t)	Author-ized power kW(t)	Initial criti-cality (yr mo)	Comment
Philippines, Republic of the, PRR-1 (Philippine Nuclear Research Institute). Quezon City	XR-034 11/16/59	GA. TRIGA Conversion			3,000.0	88 03	The original Philippine Research Reactor (PRR-1) was designed and built by GE and was commissioned as a 1 MW reactor in 1963. The reactor was shut down in 1/85 for extensive upgrading and has now become a TRIGA Conversion. It has a power level of 3 MW and reached criticality on 3/11/88.
Portugal, RPI (National Laboratory of Engineering and Industrial Technology). Sacavém	XR-013 09/13/57	AMF. Pool			1,000.0	61 04	
Slovenia (Josef Stefan Nuclear Institute). Ljubljana	XR-055 01/30/64	GA. TRIGA-Mk II			250.0	66 05	
Spain (Nuclear Energy Board-JEN). Madrid	XR-010 07/29/57	GE. Pool			3,000.0	58 10	
Thailand, TRR-1 (Office of Atomic Energy for Peace). Bankok	XR-112 05/05/77	GA. TRIGA-Mk III			2,000.0	77 11	The Thai research reactor, TRR-1, built by Curtiss-Wright and started up in 1962, originally operated at 1000 kW(t). In 6/75 the TRR-1 was shut down for conversion to TRR-1/M1, a TRIGA-Mark III system adapted for pool installation. The TRR-1/M1, with a power level of 2000 kW(t)/2000 MW pulsing was commissioned 11/77.
Turkey (Atomic Energy Commission). Istanbul	XR-030 09/04/59	AMF. Pool			1,000.0	81 12	
Turkey (Technical University of Istanbul). Istanbul	XR-108 03/24/76	GA. TRIGA-Mk II			250.0	79 03	
Venezuela (Institute for Scientific Research). Caracas	XR-018 01/16/58	GE. Pool			3,000.0	60 07	
Zaire (Regional Center for Nuclear Studies). Kinshasa		GA. TRIGA-Mk II			1,000.0	72 00	This TRIGA reactor operated at the 1958 International Conference in Geneva prior to shipment to the University of Lovanium in 6/59. It is the first reactor to be operated on the African continent.
BEING BUILT							
Morocco (C.E.N., Maâmora). Rabat	XR-158 10/25/91	GA. TRIGA-Mk II			2,000.0		Originally planned as TRIGA-Mk I, reactor was upgraded to TRIGA-Mk II. Original export license was not used.
PLANNED							
Albania. Tirana	XR-154 Pending	GA. TRIGA-Mk I			250.0		Export license application dated 10/9/90.

C. University Research and Teaching

OPERABLE

Austria (Vienna Polytechnic Institute). Vienna	XR-035 11/24/59	GA. TRIGA-Mk II	250.0	62 03	
Brazil (University of Minas Gerais). Belo Horizonte	XR-028 08/03/59	GA. TRIGA-Mk I	100.0	60 11	
Brazil (University of São Paulo). São Paulo	XR-002 01/22/57	B&W. Pool	5,000.0	57 09	
Canada (McMaster University). Hamilton, Ontario	XR-011 08/27/57	AMF. Pool	5,000.0	59 04	
China, Republic of (National Tsing-Hua University). Hsinchu	XR-020 06/05/58	GE. Pool	1,000.0	62 00	
Finland (Institute of Technology). Helsinki	XR-040 04/05/61	GA. TRIGA-Mk II	250.0	62 03	
Germany (Institute for Nuclear Medicine). Heidelberg	XR-060 02/14/66	GA. TRIGA-Mk I	250.0	66 08	This TRIGA-Mk I reactor was installed in 1966. In 1977, the reactor was shut down, dismantled, and moved to another building. After this move, it was started up again in 1978. This operation was referred to as "TRIGA I" and "TRIGA II."
Germany (Johannes Gutenberg University of Mainz). Mainz	XR-050 04/11/64	GA. TRIGA-Mk II	100.0	65 08	
Germany (Medical College of Hanover). Hanover	XR-076 02/26/71	GA. TRIGA-Mk I	250.0	73 01	
Germany, FRM Gersching (Technical University of Munich). Munich	XR-004 03/15/57	AMF. Pool	4,000.0	57 10	
Iran (University of Tehran). Tehran	XR-029 08/05/59	AMF. Pool	5,000.0	67 11	Fuel supplier being sought.
Italy (University of Palermo). Palermo	XR-025 01/07/59	AGN. 201-110		60 02	Negligible power. Shut down for renewal of operating license.
Italy (University of Pavia). Pavia	XR-056 03/12/65	GA. TRIGA-Mk II	250.0	65 11	Shut down for renewal of operating license.
Japan (Kinki University). Higashi-Osaka	XR-041 04/18/61	AR. UTR-10	0.001	61 11	Negligible power.
Japan (Rikkyo University). Yokosuka	XR-038 07/08/60	GA. TRIGA-Mk II	100.0	61 12	
Korea (University of Kyung Hee). Seoul	XR-105 11/18/75	AGN. 201	0.0001	82 12	Negligible power.
Netherlands (Delft Technical University). Delft	XR-003 02/01/57	AMF. Pool (MTR)	2,000.0	63 04	The Netherlands research reactor was originally operated at the Amsterdam International Exhibition in 6/57; major portions of the exhibition reactor system were used to fabricate the present reactor.
Switzerland (University of Basel). Basel		AGN. 211-100		58 06	This reactor was operated in the International Science Section of the Brussels Information Exhibition, 4/15/58 to 10/1/58, prior to transfer to the University of Basel. Negligible power.

1. CIVILIAN

PART V CRITICAL ASSEMBLIES

Facility (Regulatory agency)	Designation	Location	Equipment: No. of cells	Equipment: No. of control panels/ room	Abbreviation	Initial criticality (yr mo)	Comment
Advanced Test Reactor Critical Facility (DOE)	ATRC	INEL Site, ID	1	1	ATRC	64 00	ATR physics, core-loading and core-design measurements.
Los Alamos National Laboratory (DOE)	Big Ten	Pajarito Site, Los Alamos, NM			LANL, Kiva II	72 00	U(10)-metal cylinder in thick metal reflector. Defueled.
Los Alamos National Laboratory (DOE)	Comet	Pajarito Site, Los Alamos, NM			LANL, Kiva II	52 00	Critical-configuration safety and neutronic tests.
Los Alamos National Laboratory (DOE)	Flattop	Pajarito Site, Los Alamos, NM	1	1	LANL, Kiva II	57 00	Spherical metal cores in thick metal reflector.
Los Alamos National Laboratory (DOE)	Godiva-IV	Pajarito Site, Los Alamos, NM			LANL, Kiva III	67 00	Fast neutron irradiation, pulse capability.
Los Alamos National Laboratory (DOE)	Honeycomb	Pajarito Site, Los Alamos, NM			LANL, Kiva I	56 00	Flexible split table assembly. Defueled.
Los Alamos National Laboratory (DOE)	Comet	Pajarito Site, Los Alamos, NM			LANL, Kiva I	74 00	Vertical table assembly machine.
Los Alamos National Laboratory (DOE)	Planet	Pajarito Site, Los Alamos, NM			LANL, Kiva II	84 00	Vertical table assembly.
Los Alamos National Laboratory (DOE)	SHEBA	Pajarito Site, Los Alamos, NM	2	1	LANL, Kiva I	80 00	New upgraded version of SHEBA became operational on 12/92.
Los Alamos National Laboratory (DOE)	SKUA	Pajarito Site, Los Alamos, NM	1	1	LANL, Kiva III	78 00	Fast neutron irradiation, pulse capability.
Rensselaer Polytechnic Institute (NRC)		Troy, NY	1	1	Rensselaer	66 00	Critical experiment assembly.

2. MILITARY

PART V CRITICAL ASSEMBLIES

Facility (Regulatory agency)	Designation	Location	Equipment: No. of cells	Equipment: No. of control panels/ room	Abbreviation	Initial criticality (yr mo)	Comment

(no reactors currently in this category)